



3330 Cameron Park Drive, Ste 550  
Cameron Park, California 95682  
(530) 676-6004 ~ Fax: (530) 676-6005

September 21, 2005  
Project No. 2028-0031-01

Mr. Michael Smith  
California Regional Water Quality Control Board  
Central Valley Region  
11020 Sun Center Drive  
Rancho Cordova, California 95670

Re: Addendum to No Further Action Request  
Nella Oil Company Station No. 31  
12008 Plaza Drive, Grass Valley, California

Dear Mr. Smith:

Stratus Environmental, Inc. (Stratus), on behalf of Nella Oil Company (Nella), is submitting this *Addendum to No Further Action Request* for Nella Station No. 31 (the site), located at 12008 Plaza Drive, Grass Valley, California. Stratus has previously requested that the environmental case at this site be closed (*No Further Action Request* [NFAR], August 22, 2005). After reviewing the information submitted in the NFAR, California Regional Water Quality Control Board (CRWQCB) personnel requested a meeting with Stratus to discuss items of concern necessary to close the environmental oversight case. During this meeting, CRWQCB personnel presented a list of items that needed to be addressed to enable further consideration of the environmental case for closure. The CRWQCB requested that a report be submitted to provide documentation and interpretive discussion to these items of concern.

The following four subsections of this document address items of concern to the CRWQCB relating to closure of the environmental case at the site. Italicized items are questions or observations of concern to the CRWQCB; bolded text are interpretive discussions prepared by Stratus in response to the CRWQCB item of concern.

*1. During replacement of the gasoline product delivery lines in November and December 2001, GHH Engineering Inc. (GHH) personnel collected grab groundwater samples from static water exposed within the underground storage tank (UST) basin. Total petroleum hydrocarbons as gasoline (TPHG), benzene, and the fuel additive methyl tertiary butyl ether (MTBE) were reported at maximum concentrations of 330,000 micrograms per liter (µg/L), 12,000 µg/L, and 310,000 µg/L, respectively, in the samples (Sampling Report, GHH, March 2002). Discuss/explain the relatively high concentrations of petroleum hydrocarbons reported during this sampling event.*

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The groundwater samples collected by GHH personnel in November and December 2001, were within pea gravel fill material situated around and above the USTs. The UST pit is surrounded by fine grained soils (predominately silty clay) and underlain by relatively shallow granitic bedrock. Due to expected low permeabilities, these fine grained soils and bedrock should likely inhibit lateral or vertical movement of petroleum hydrocarbons away from the UST pit, resulting in a concentration of any dissolved petroleum hydrocarbons released within the pea gravel surrounding the USTs. During construction activities, the contractor completing the renovation utilized a vacuum truck to extract groundwater situated within the UST cavity (November 30, 2001 and December 3, 2001), likely resulting in removal of a significant percentage of the dissolved petroleum hydrocarbon mass present beneath the site.

Stratus installed wells MW-1 through MW-3 west, southwest, and south (generally downgradient) of the UST pit and fuel dispenser area (see Figure 1). Concentrations of TPHG and benzene in groundwater samples collected from wells MW-1 through MW-3 have consistently been reported below laboratory limits. Dissolved MTBE concentrations in wells MW-1 through MW-3 are very low and currently meet water quality objectives established by the State of California. Given the close proximity of these wells to the USTs and pump islands, the historical groundwater analytical data suggests that petroleum hydrocarbon impact to groundwater remaining beneath the site is of limited extent.

*2. Lead was detected in the groundwater samples collected by GHH at concentrations of 24 µg/L and 27 µg/L, above the 15µg/L maximum contaminant level (MCL) established by the State of California. One-time sampling of the impacted monitoring wells, with analysis for total lead, is necessary.*

Stratus collected grab (no-purge) groundwater samples from wells MW-1 through MW-3 on September 1, 2005. Samples were retrieved in a Teflon™ bailer, transferred to laboratory supplied containers containing an HNO<sub>3</sub> preservative, and stored in an ice-chilled cooler. Samples were delivered to Kiff Analytical, LLC (Kiff), a state certified analytical laboratory, under strict chain-of-custody procedures. Kiff subsequently forwarded the samples to Calscience Environmental Laboratories, Inc. (ELAP #1230) for chemical analysis. A certified analytical report, with chain-of-custody documentation, is attached. Concentrations of total lead were reported below laboratory detection limits (10 µg/L) in all of the samples.

CRWQCB verbally indicated (September 1, 2005), that completion of a formal groundwater monitoring and reporting event was not required for the third quarter 2005 during consideration of the environmental case for closure.

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3. *A french drain system was reportedly constructed beneath the site at the time of UST installation, reportedly to improve subsurface drainage in the UST area. In an on-site meeting (September 1, 2005), Stratus and CRWQCB personnel discussed the construction and location of the french drain and two storm drain systems that are present beneath the property (see Figure 1 for approximate location). Stratus informed the CRWQCB representative that water has not been observed exiting the french drain outlet at any time of the year between 2002 and 2005. The CRWQCB subsequently requested further explanation for the absence of water in the french drain system.*

**Stratus is unable to unequivocally explain the reason that groundwater does not discharge from the french drain outlet. A formal description of known information regarding the french drain and storm drain systems beneath the site was presented by Stratus in a document titled *Drainage System Evaluation* (February 28, 2003). A video camera inspection of the french drain pipe is currently impractical due to inaccessibility.**

**Although the rationale for the absence of groundwater within the french drain pipe cannot be definitively explained at this time, petroleum hydrocarbon impacted groundwater is not being discharged to the East Branch of Olympia Creek storm drain via the french drain system. The following discussion presents possible explanations for the absence of groundwater flowing from the french drain outlet.**

#### **Alternative A**

**During the 2001 site renovation activities, the construction contractor exposed the UST pit in order to remove and replace the connecting product lines. During exposure of the product lines, pea gravel covering the USTs would have been removed to enable access to the upper surface of the USTs. As the pea gravel was removed, the PVC french drain piping situated on top of the USTs would have been encountered. During pea gravel removal, the support for the PVC piping would have also been removed, leaving the pipe suspended over the top of the USTs.**

**A 6-inch diameter PVC pipe that crossed the upper surface of the USTs would have caused significant inconvenience to a contractor installing new product lines. It appears likely that the site renovation contractor removed the portion of the french drain piping situated above the USTs in order to complete construction activities. Possible capping of the portion of the french drain pipe extending southward from the USTs is not known.**

#### **Alternative B**

**The french drain pipe remains in place on top of the USTs, immediately below the concrete surface covering the UST complex. If the french drain system were only perforated in the UST area, the perforated section of the french drain would likely be situated above the**

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static water table surface (historically 4.5 to 7.5 feet bgs in the monitoring wells). The french drain system may have been constructed to only receive groundwater at times of very high groundwater levels that have not been historically observed.

### Alternative C

Stratus has observed that the storm drain containing the Eastern Branch of Olympia Creek is situated approximately 4 feet below grade, immediately east of Plaza Drive (see Figure 1 for location). The french drain excavation runs parallel to the Eastern Branch of Olympia Creek storm drain excavation, immediately south of the site (see Figure 1). If the french drain system were installed beneath the UST complex (at least 10 feet bgs), the section of the french drain pipe situated between the UST complex and the southern property line was not installed with a slope towards the south. If the french drain piping slopes upward between the UST complex and the junction with the East Branch of Olympia Creek storm drain, groundwater that enters the french drain would not likely flow away from the UST area in the french drain pipe.

### Alternative D

The french drain system may have been installed with non-perforated piping. A 1985 grading plan prepared by Wong and Associates (prior to construction) does not specify use of perforated or non-perforated piping beneath the service station. As-built drawings of the french drain do not appear to have been prepared. If the french drain pipe inlet was capped, or became obstructed, groundwater would not enter the piping, explaining the absence of groundwater at the french drain outlet.

### Discussion

Based on information provided by the property owner in 2002, the french drain system was constructed to slope southward at a 0.5 percent slope (*Drainage System Evaluation, February 28, 2003*). If this is the case, the french drain pipe must have been installed on top of the USTs given the relatively flat topography at the site and the observed depth of the discharge point below surface grade (approximately 6 to 7 feet bgs). Therefore, alternative C would not be a reasonable explanation for the absence of groundwater at the french drain outlet if the french drain was constructed to slope towards the drainage outlet south of the site.

Based on our work experience with UST contractors and our understanding of procedures utilized to renovate product delivery systems, it appears unlikely that perforated (Alternative B) or nonperforated (Alternative D) french drain pipe would have been left in place over the USTs during replacement of the product lines in 2001. Extra efforts and cost outside of the normal work performed by the contractor would have been required to

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**provide support for the pipe as pea gravel was removed to expose the top of the USTs. Therefore, it does not appear likely that the french drain pipe remains in place over the top of the UST complex, and Alternative A appears to be the most reasonable explanation for the absence of groundwater observed at the french drain outlet.**

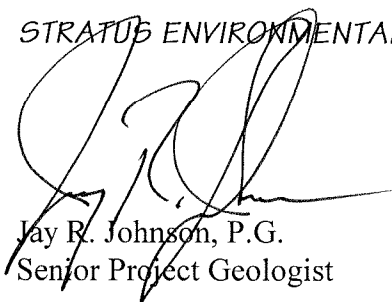
*4. CRWQCB personnel inquired as to whether olfactory evidence of petroleum hydrocarbons within the storm drain system containing the french drain outlet have been observed.*

**Stratus personnel have not observed any olfactory evidence of petroleum hydrocarbon impact to the East Branch of Olympia Creek storm drain.**

We hope this information sufficiently discusses items of concern to CRWQCB personnel. If you have any questions, or require further explanation, please call Jay Johnson at (530) 676-6000 or Scott Bittinger at (530) 676-2062.

Sincerely,

STRATUS ENVIRONMENTAL, INC.



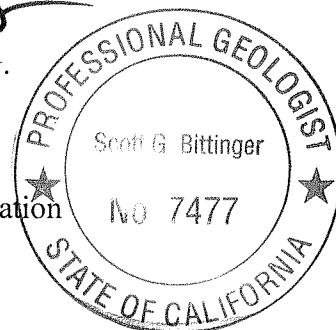
Jay R. Johnson, P.G.  
Senior Project Geologist



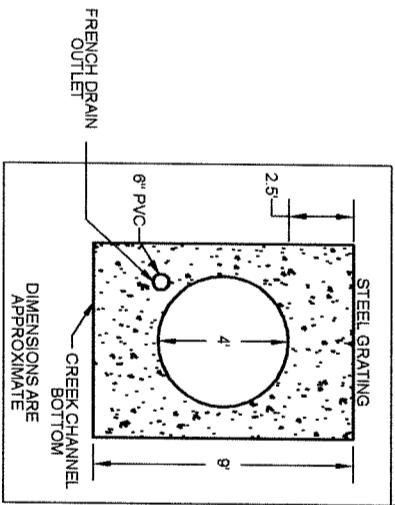
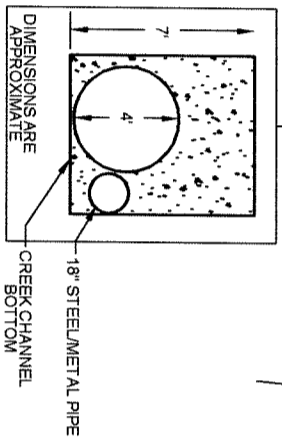
Scott G. Bittinger, P.G.  
Project Manager

Attachment: Figure 1 Site Plan  
Certified Analytical Reports and Chain-of-Custody Documentation

cc: Ms. Amanda Massey, Nella Oil Company  
Mr. Markus Niebanck, Nella Oil Company  
Ms. Julia R. Amaral, Property Owner  
Mr. David Huff, Nevada County Environmental Health Department



- LEGEND:
- MW-4 GROUNDWATER MONITORING WELL INSTALLED BY STRATUS ENVIRONMENTAL, INC.
  - MW-2 ABANDONED GROUNDWATER MONITORING WELL INSTALLED BY DELTA ENVIRONMENTAL CONSULTANTS, INC.
  - ⊗ MW-4 ABANDONED GROUNDWATER MONITORING WELL INSTALLED BY FUGRO
  - SD — STORM DRAIN/WESTERN & EASTERN BRANCHES OF OLYMPIA CREEK
  - STORM DRAIN INLET
  - CONCRETE



ONSITE FRENCH DRAIN LOCATION  
BASED ON GRADING PLAN PREPARED BY  
WONG & ASSOCIATES OF SACRAMENTO, CA  
SEPTEMBER 1985

STORM DRAIN LOCATION BASED ON  
OLYMPIA PLAZA SHOPPING CENTER PLANS  
PREPARED BY NEVADA CITY ENGINEERS, INC  
JUNE 1983



STRATUS  
ENVIRONMENTAL, INC.



NELLA OIL STATION NO. 31  
12008 PLAZA DRIVE  
GRASS VALLEY, CALIFORNIA

SITE PLAN

FIGURE  
1  
PROJECT NO.  
2028-31-1



Report Number : 45692

Date : 09/07/2005

Scott Bittinger  
Stratus Environmental, Inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682

Subject : 3 Samples  
Project Name : Nella Oil Co. Station 31  
Project Number : 2028-0031-1

Dear Mr. Bittinger,

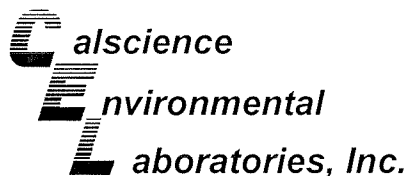
Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff



September 07, 2005

Joel Kiff  
Kiff Analytical  
2795 2nd Street, Suite 300  
Davis, CA 95616-6593

Subject: **Calscience Work Order No.: 05-09-0100**  
Client Reference: **Nella Oil Co. Station 31**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/2/2005 and analyzed in accordance with the attached chain-of-custody.

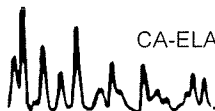
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

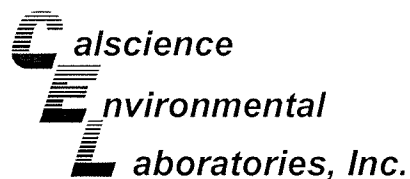
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Nowak", written in a cursive style.

Calscience Environmental  
Laboratories, Inc.  
Stephen Nowak  
Project Manager





## Analytical Report

Kiff Analytical  
2795 2nd Street, Suite 300  
Davis, CA 95616-6593

Date Received: 09/02/05  
Work Order No: 05-09-0100  
Preparation: EPA 3010A Total  
Method: EPA 6010B

Project: Nella Oil Co. Station 31

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-1	05-09-0100-1	09/01/05	Aqueous	09/02/05	09/02/05	050902L06A

Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.0100	1		mg/L

MW-2	05-09-0100-2	09/01/05	Aqueous	09/02/05	09/02/05	050902L06A
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Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.0100	1		mg/L

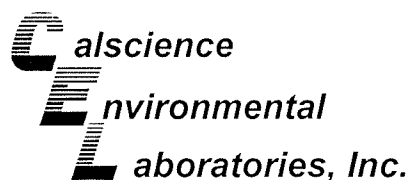
MW-3	05-09-0100-3	09/01/05	Aqueous	09/02/05	09/02/05	050902L06A
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Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.0100	1		mg/L

Method Blank	097-01-003-5,292	N/A	Aqueous	09/02/05	09/02/05	050902L06A
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Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.0100	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - Spike/Spike Duplicate

Kiff Analytical  
2795 2nd Street, Suite 300  
Davis, CA 95616-6593

Date Received: 09/02/05  
Work Order No: 05-09-0100  
Preparation: EPA 3010A Total  
Method: EPA 6010B

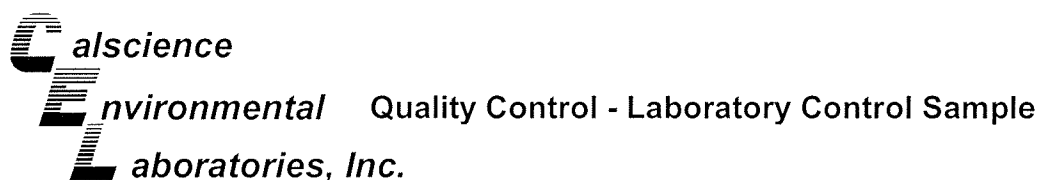
Project Nella Oil Co. Station 31

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
05-09-0078-1	Aqueous	ICP 3300	09/02/05	09/06/05	050902S06

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	102	104	80-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



Kiff Analytical  
2795 2nd Street, Suite 300  
Davis, CA 95616-6593

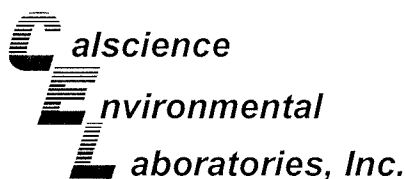
Date Received: N/A  
Work Order No: 05-09-0100  
Preparation: EPA 3010A Total  
Method: EPA 6010B

Project: Nella Oil Co. Station 31

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number	
097-01-003-5,292	Aqueous	ICP 3300	09/02/05	050902-I-06	050902L06A	
Parameter		Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Lead		0.500	0.533	107	80-120	

RPD - Relative Percent Difference , CL - Control Limit

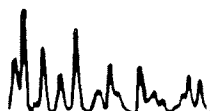
7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



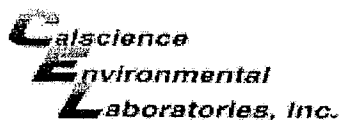
## Glossary of Terms and Qualifiers

Work Order Number: 05-09-0100

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.



[illegible]



WORK ORDER #:

05 - 09 - 0100

Cooler 1 of 1

## SAMPLE RECEIPT FORM

CLIENT:

Kiff

DATE:

9/2/05

## TEMPERATURE - SAMPLES RECEIVED BY:

## CALSCIENCE COURIER:

- ☐ Chilled, cooler with temperature blank provided.  
☐ Chilled, cooler without temperature blank.  
☐ Chilled and placed in cooler with wet ice.  
☐ Ambient and placed in cooler with wet ice.  
☐ Ambient temperature.  
☐ °C Temperature blank.

## LABORATORY (Other than Calscience Courier):

- 3.9 °C Temperature blank.  
☐ °C IR thermometer.  
☐ Ambient temperature.

Initial:

JP

## CUSTODY SEAL INTACT:

Sample(s): \_\_\_\_\_

Cooler: ✓

No (Not Intact) : \_\_\_\_\_

Not Applicable (N/A): \_\_\_\_\_

Initial:

JP

## SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<u>✓</u>		
Sample container label(s) consistent with custody papers.....	<u>✓</u>		
Sample container(s) intact and good condition.....	<u>✓</u>		
Correct containers for analyses requested.....	<u>✓</u>		
Proper preservation noted on sample label(s).....			<u>✓</u>
VOA vial(s) free of headspace. ....			<u>✓</u>
Tedlar bag(s) free of condensation.....			<u>✓</u>

Initial:

JP

## COMMENTS:

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